Amendments to The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A computer-implemented method for selecting an obscured object in a three-dimensional computer-generated model, the method comprising:

displaying the three-dimensional computer-generated model on a computer screen, wherein:

the three-dimensional computer-generated model consists of a plurality of objects used to construct a part;

a first set of the plurality of objects when displayed obscures a second set of the plurality of objects;

the first set of the plurality of objects comprises ~~at least one~~ a face, the face having a visibility characteristic that may be independently changed; and

the second set of the plurality of objects comprises ~~at least one~~ a face, the face having a visibility characteristic that may be independently changed;

receiving first input data interpreted as an instruction to change a visibility characteristic of a first ~~one~~ object of the first set of the plurality of objects, the first ~~one~~ object of the first set identified upon receiving the first input data and by determining that the first ~~one~~ object of the first set shares a same location on the computer screen as a cursor;

automatically modifying the visibility characteristic of the first ~~one~~ object of the first set to cause a first ~~one~~ object of the second set of the plurality of objects to be discernable;

receiving second input data interpreted as an instruction to select the first ~~one~~ object of the second set of the plurality of objects, the first ~~one~~ object of the second set identified upon receiving the second input data and by determining that the first ~~one~~ object of the second set shares the same location on the computer screen as the cursor; and

designating the first ~~one~~ object of the second set of the plurality of objects as a first selected object.

2. (Currently amended) The computer-implemented method of claim 1, wherein:

modifying the visibility characteristic automatically causes the first ~~one~~ object of the first set

of the plurality of objects to become transparent and discernable.

3. (Currently amended) The computer-implemented method of claim 1, wherein:

modifying the visibility characteristic automatically causes the first ~~one~~ object of the first set

of the plurality of objects to become invisible.

4. (Currently amended) The computer-implemented method of claim 1, wherein:

modifying the visibility characteristic automatically causes the removal of the first ~~one~~ object

of the first set of the plurality of objects from a display structure used for constructing the

computer-generated model.

5. (Currently amended) The computer-implemented method of claim 1, wherein:

designating the first ~~one~~ object of the second set of the plurality of objects comprises

highlighting the first ~~one~~ object of the second set of the plurality of objects.

6. (Currently amended) The computer-implemented method of claim 5, wherein:

highlighting the first ~~one~~ object of the second set of objects comprises one of displaying a

border of the first ~~one~~ object of the second set of the plurality of objects and changing a

color of the first ~~one~~ object of the second set of the plurality of objects.

7. (Original) The computer-implemented method of claim 1, wherein:

a pointing device generates the first input data; and

the pointing device generates the second input data.

8. (Previously presented) The computer-implemented method of claim 7, wherein:

the pointing device is a mouse device.

9. (Currently amended) The computer-implemented method of claim 1, wherein:

the three-dimensional computer-generated model is a solid model; and

the first ~~one~~ object of the first set of the plurality of objects is a face.

10. (Currently amended) The computer-implemented method of claim 9, wherein:

the first ~~one~~ object of the second set of the plurality of objects is one of a face, an edge, a

vertex, and a surface.

11. (Currently amended) The computer-implemented method of claim 1, wherein:

the three-dimensional computer-generated model is a solid model;

the first ~~one~~ object of the first set of the plurality of objects is one of a vertex or an edge;

and further comprising:

automatically modifying a visibility characteristic of a first face adjacent to the first ~~one~~

object of the first set of the plurality of objects; and

automatically causing at least one of the plurality of objects positioned behind the first face

to be visible.

12. (Currently amended) The computer-implemented method of claim 1, wherein:

subsequent to designating the first ~~one~~ object of the second set of the plurality of objects as a

first selected object, automatically reverting the first ~~one~~ object of the first set of the

plurality of objects to an initial visibility state.

13. (Currently amended) The computer-implemented method of claim 1, further comprising:

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receiving third input data interpreted as an instruction to select a second ~~one~~ object of the

second set of the plurality of objects, the second ~~one~~ object of the second set identified

upon receiving the third input data and by determining that the second ~~one~~ object of the

second set shares the same location on the computer screen as the cursor; and

highlighting the second ~~one~~ object of the second set of the plurality of objects for

distinguishing the second ~~one~~ object of the second set as a second selected object.

14. (Currently amended) The computer-implemented method of claim 1, further comprising:

receiving third input data interpreted as an instruction to change a visibility characteristic of

a second ~~one~~ object of the first set of the plurality of objects, the second ~~one~~ object of the

first set identified upon receiving the third input data and by determining that the second

~~one~~ object of the first set shares the same location on the computer screen as the cursor;

automatically modifying the visibility characteristic of the second ~~one~~ object of the first set

of the plurality of objects to reveal a second ~~one~~ object of the second set of the plurality

of objects positioned behind the second ~~one~~ object of the first set;

receiving fourth input data interpreted as an instruction to select ~~a~~ the second ~~one~~ object of

the second set of the plurality of objects, the second ~~one~~ object of the second set

identified upon receiving the fourth input data and by determining that the second ~~one~~

object of the second set shares the same location on the computer screen as the cursor;

designating the second ~~one~~ object of the second set of the plurality of objects as a second

selected object; and

highlighting the second ~~one~~ object of the second set of the plurality of objects to visually

indicate the designation as a second selected object.

15. (Currently amended) The computer-implemented method of claim 14, wherein:

automatically modifying the visibility characteristic of the second ~~one~~ <u>object</u> of the first set

of the plurality of objects causes the second ~~one~~ <u>object</u> of the first set to become

transparent and discernable.

16. (Currently amended) The computer-implemented method of claim 14, wherein:

automatically modifying the visibility characteristic of the second ~~one~~ <u>object</u> of the first set

of the plurality of objects causes the second ~~one~~ <u>object</u> of the first set to become invisible.

17. (Currently amended) The computer-implemented method of claim 14, wherein:

automatically modifying the visibility characteristic of the second ~~one~~ <u>object</u> of the first set

of the plurality of objects causes the removal of the second ~~one~~ <u>object</u> of the first set from

a display structure used for constructing the computer-generated model.

18. (Currently amended) A computer executable program residing on a computer readable

medium, the program comprising instructions causing a computer to:

enable selection of at least one of a plurality of obscured objects;

receive first input data generated by a first button while a cursor positioned in accordance

with data from a pointing device is located over a first object;

determine that the first object is an edge used in the construction of a solid model;

automatically modify a visibility characteristic of at least one of a plurality of faces sharing

the edge to reveal a first ~~one~~ <u>object</u> of the plurality of obscured objects positioned in a

modeling space behind at least one of the plurality of faces;

receive second input data generated by a second button while the cursor positioned in

accordance with data from the pointing device is located over the first ~~one~~ <u>object</u> of the

plurality of obscured objects;

designate the first ~~one~~ object of the plurality of obscured objects as a first selected object

    wherein designating comprises highlighting the first ~~one~~ object of the plurality of

    obscured objects; and

automatically modify the visibility characteristic of at least one of the plurality of faces

    sharing the edge to a previous visibility state, wherein the visibility characteristic of <u>a</u>

    <u>face</u> ~~at least one~~ of the plurality of faces may be modified independently from the

    visibility characteristic of other faces.

19. (Currently amended) The computer executable program of claim 18, wherein:

the first ~~one~~ object of the plurality of obscured objects is a face; and

highlighting the first ~~one~~ object of the plurality of obscured objects comprises one of

    changing a line texture of a plurality of edges of the face and changing a color of the face.

20. (Previously presented) A digital computer comprising:

a memory, data stored in said memory, and control information stored in said memory; and

a data processor for processing said data in accordance with said control information;

wherein,

said control information is arranged to:

    process a data structure defining a three-dimensional model comprised of a plurality of

        entities used to generate a representation of a real-world three-dimensional object,

        wherein each one of the plurality of entities is one of a vertex, an edge, a face, and a

        surface;

    receive first input data generated by a button used in conjunction with a pointing device

        controlling a location of a cursor, wherein the first input data is interpreted as a

        command to make one of the plurality of entities invisible, wherein a visibility

        characteristic of a face of the plurality of entities may be independently controlled;

automatically suppress display of a first one of the plurality of entities positioned beneath the cursor when the first input data was received while continuing to display other ones of the plurality of entities;

receive second input data generated by the button, wherein second input data is interpreted as a command to select one of the other ones of the plurality of entities; and

designate a second one of the plurality of entities as a selected entity, the second one designated upon receiving the second input data and determining that the second one shares a common location with the cursor.

21. (Original) The digital computer of claim 20, wherein:

the second one of the plurality of entities is a face; and

said control information is further arranged to highlight the second one of the plurality of entities by one of changing a line texture of a plurality of edges of the face and changing a color of the face.

22. (Previously presented) The digital computer of claim 20, wherein:

the first one of the plurality of entities is a first edge; and further comprising control information arranged to automatically suppress display of the face that is adjacent to the first edge.